

## REMARKS

The applicant appreciates the Examiner's thorough examination of the application and requests reexamination and reconsideration of the application in view of the preceding amendments and the following remarks.

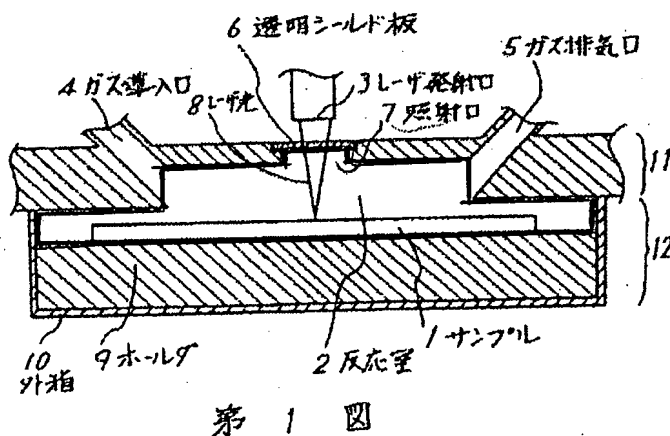
The Examiner rejects claims 1-2, 4-13, 17-20, 24-25, 29 and 34-35 under 35 U.S.C. §103(a) as being unpatentable over Japanese Patent No. JP62U47482 to Miyagawa *et al.* in view of U.S. Pat. No. 5,814,156 to Elliott *et al.* The Examiner also rejects claim 3 under 35 U.S.C. §103(a) as being unpatentable over Miyagawa *et al.* in view of Elliott *et al.* and further in view of U.S. Pat. No. 4,624,330 to Schmidt *et al.* The Examiner further rejects claim 14 under 35 U.S.C. §103(a) as being unpatentable over Miyagawa *et al.* in view of Elliott *et al.* and further in view of U.S. Pat. No. 5,002,63 to Giapis *et al.* The Examiner also rejects claim 23 under 35 U.S.C. §103(a) as being unpatentable over Miyagawa *et al.* in view of Elliott *et al.* and further in view of U.S. Pat. No. 6,374,770 to Lee *et al.* The Examiner further rejects claim 26 under 35 U.S.C. §103(a) as being unpatentable over Miyagawa *et al.* in view of Elliott *et al.* and further in view of U.S. Pat. No. 6,090,458 to Murakami *et al.*

Claim 1 of the subject application is directed to a scanning plasma reactor for exciting or ionizing reactant gases with UV radiation at a substrate surface comprising a beam forming module to transform a UV radiation source raw output into a rectangular beam, a gas injection module to deliver at least one reactant gas to the substrate surface, a reaction chamber with a UV window through which said beam forming module projects said rectangular beam, a vacuum chuck for holding the substrate, and a gas exhaust module inside said chamber to remove reaction by-products and unreacted reactant gas from the

substrate surface, wherein said gas injection module and said gas exhaust module are in close proximity to said rectangular beam, and wherein said rectangular beam, said gas injection module and said gas exhaust module are movable relative to the reaction chamber and the substrate surface.

The applicants submit that Miyagawa *et al.* fails to disclose a gas exhaust module inside the reaction chamber as claimed by the applicants. The Examiner alleges that Figure 1 of Miyagawa *et al.* shows that gas outlet 5 is located within the chamber.

A marked-up version of Figure 1 of Miyagawa *et al.* is reproduced below, and the perimeter of the chamber of Miyagawa *et al.* is indicated by the red lines.



As shown in the above marked-up Figure, it is clear that gas outlet 5 of Miyagawa *et al.* is not inside the chamber as claimed by the applicants. Sections of the walls of gas inlet 5 form a portion of the perimeter of the chamber, but no portion of the gas inlet is inside the chamber as claimed by the applicants.

Accordingly, as Miyagawa *et al.* fails to disclose a gas exhaust module inside the

chamber as claimed by the applicants, independent claims 1, 29, 34, and 35, and their respective dependent claims, are patentable over the cited references.

The Examiner rejects claims 1-2, 4-13, 16-20, 24-25, 27, 29 and 34-37 under 35 U.S.C. §103(a) as being unpatentable over Japanese Patent No. JP07111246 to Oki *et al.* in view of Japanese Patent No. JP63153277 to Hama and Elliott *et al.* The Examiner also rejects claim 3 under 35 U.S.C. §103(a) as being unpatentable over Oki *et al.* in view of Hama and Elliott *et al.* and further in view of Schmidt *et al.* The Examiner also rejects claim 14 under 35 U.S.C. §103(a) as being unpatentable over Oki *et al.* in view of Hama and Elliott *et al.* and further in view of Giapis *et al.* The Examiner further rejects claim 23 under 35 U.S.C. §103(a) as being unpatentable over Oki *et al.* in view of Hama and Elliott *et al.* and further in view of Lee *et al.* The Examiner further rejects claim 26 under 35 U.S.C. §103(a) as being unpatentable over Oki *et al.* in view of Hama and Elliott *et al.* and further in view of Murakami *et al.*

Independent claim 1 includes that feature that the gas injection module and the gas exhaust module are movable relative to the reaction chamber. Independent claims 29 and 34-39 include similar features. The Examiner admits that Oki *et al.* does not teach that the gas injection module and the gas exhaust module are movable relative to the reaction chamber and the substrate as claimed by the applicants. The Examiner alleges that Hama discloses this feature, and that it would have been obvious to one of ordinary skill in the art to modify Oki *et al.* as taught by Hama.

However, the gas inlet 32 and gas exhaust port 32 of Oki *et al.* are fixed in place; and appear to be integrally connected to chamber 30. See Fig. 1 of Oki *et al.* Being integral with the chamber does not allow the gas inlet and gas exhaust port of Oki *et al.* to be

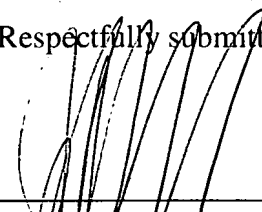
modified to be movable to the reaction chamber as claimed by the applicants without interfering with the operation of Oki *et al.* Therefore, there is no motivation, and it would not be obvious, to modify Oki *et al.* to include the teachings of Hama.

Accordingly, claims 1-2, 4-13, 16-20, 24-25, 27, 29 and 34-37 are patentable over the cited references.

Each of Examiner's objections has been addressed and/or traversed. Early and favorable action is respectfully requested.

If for any reason this Response is found to be incomplete, or if at any time it appears that a telephone conference with counsel would help advance prosecution, please telephone the undersigned or his associates, collect in Waltham, Massachusetts at (781) 890-5678.

Respectfully submitted,



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